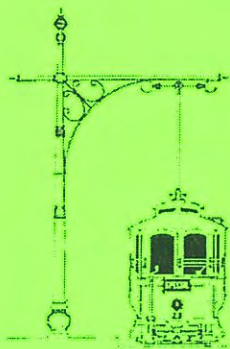


CEREMONY REPORT
for plaquing the

SYDNEY TRAMWAY MUSEM

31 March 2001





The Chairman and Board of the Sydney Tramway Museum cordially invites

DON FRASER

and partner/family

to the Official Ceremony for the unveiling of an

Historical Engineering Marker

by

Andrew Leventhall

President, Sydney Division, the Institution of Engineers, Australia

to commemorate the significance of tramways in the development of Sydney

at

Sydney Tramway Museum

cnr of Pitt Street and Old Princes Highway Loftus (adjacent to Loftus Railway Station)

on Saturday 31st March 2001 at 2.30 pm

Light refreshments and vintage tram rides will follow.

RSVP: 19 March 2001

PO Box 103 Sutherland 1499
Telephone 9337 5307
Fax 9545 3390

Institution of Engineers Plaquing Ceremony

On 31 March 2001 the Institution of Engineers, Australia's Engineering Heritage Committee recognised the significant contribution that the Sydney Tramway System made to the development of Sydney in a Plaquing Ceremony held at the Museum. The Ceremony not only recognised the significance of the Sydney Tramway System but also highlighted the Golden Anniversary of the Sydney Tramway Museum.

Over 100 invited guests and a large contingent of Museum members gathered near the historic Railway Square Waiting Shed to take part in this historic occasion.





Councillor George Hurley representing the Mayor of Sutherland Shire welcomed the Official Guests and outlined the relationship between Sutherland Shire and the Sydney Tramway Museum. He stressed that the Shire was pleased to host the Museum with its impressive collection and operation of Sydney's tramway heritage and was working closely with the Museum in its current expansion program. On behalf of the Shire he looked to a great future for the Museum.



Federal Member for Hughes, Dana Vale MP, spoke of her pleasure in seeing that the activities of the Sydney Tramway Museum were now occurring not only within Sydney but also on a national level. She ranked the operation of the Museum's 'R' class tram number 1808 in this year's Moomba Parade in Melbourne on 12 March 2001, when it was on display before a crowd of 200,000 people, a highlight in the progress of the Museum.

Ms Vale noted that the Federal Government's overseas trade facilitator, Austrade, has been proud to assist the Museum in the complex negotiations involved in ensuring the safe delivery of the international component of the Museum's collection and that the Federal Government had been pleased to provide Federation funding to assist in the restoration of historic 'C' class car to fully operational status. She was looking forward to its official launch as a regular passenger carrying tramcar later in 2001.



Howard Clark responded on behalf of the Museum outlining the various facets of the contribution of the tramway system to the growth and development of Sydney and touching on the major milestones in the growth of the Museum.

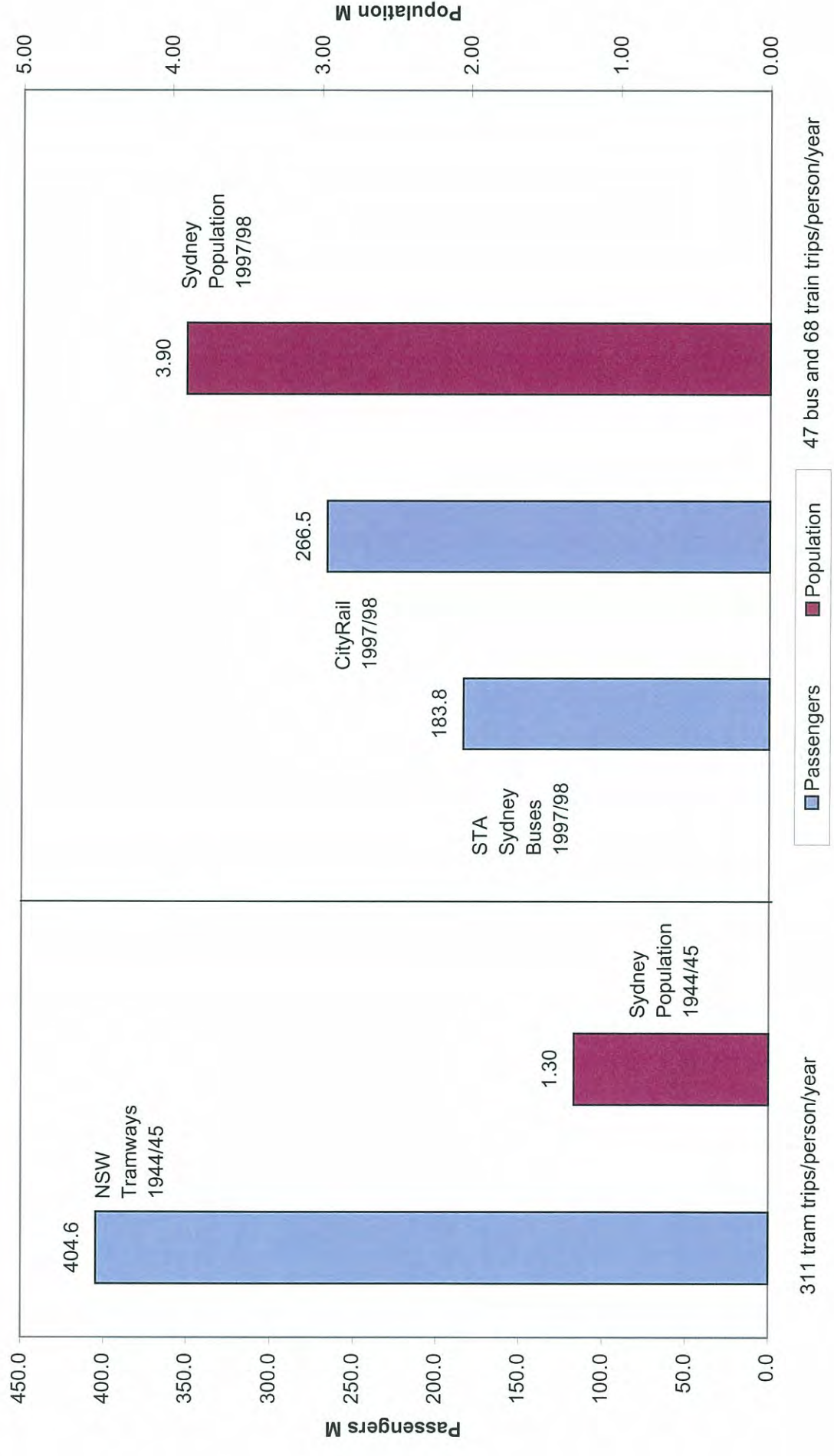


In response, State Member for Heathcote, Ian McManus MP, observed that every time he visited the Sydney Tramway Museum he was impressed with the progress being made in extending this wonderful facility. He noted that the Museum was opened in 1950 by Deputy Premier Pat Hills MP and from small beginnings has grown to become the largest in the southern hemisphere an extraordinary achievement for an entirely voluntary organisation operating as a non profit co-operative society. The NSW Government had been a significant contributor to the ongoing development of the heritage transport complex. Past grants have been instrumental in helping the Museum to construct its Restoration Building and the erection of the third major building on the north west corner of this site. The safety of the Museum's valuable and unique collection has been further safeguarded by the fire sprinkler system which has also been assisted with funding support from the NSW Government. He was particularly pleased to see former transport Minister, Brian Langton and former Lord Mayor of Sydney, Doug Sutherland, present on this occasion.



The Chairman of the Sydney Division of the Institution of Engineers, Andrew Leventhal, then addressed the gathering on the engineering and social significance of the NSW Tramways and outlined the reasons for plaquing. In his address Andrew noted the contribution of engineers of the calibre of Sir John Bradfield to the development of the tramways and the way in which state of the art technology was introduced and developed by the engineers of the NSW Tramways. He also was at pains to point out to the audience that the passenger carrying performance of the tramways in the first half of the twentieth century far eclipsed the current passenger loadings of Sydney Buses and CityRail.

Then and Now - Sydney Public Transport Usage





The official party then unveiled the Plaque and afternoon tea and the customary tram rides were provided.

Overall a most successful day for the Museum and special thanks to all those who assisted in the smooth functioning of this important event.

Engineers

sydney

May 2001

IEAust Sydney Division

Level 1, 118 Alfred Street, (PO Box 138), Milsons Point NSW 2061
phone 02 8923 7100, fax 02 9956 7670, email contact_sydney@eol.ieaust.org.au



PRESIDENT'S REPORT

ANDREW LEVENTHAL

Welcome to the May issue of Engineers Sydney.

Forum on Margins

On 28 March the NSW Division of the Building Science Forum of Australia (BSFA) held a seminar titled "Improving Margins for Consultants and Contractors". About 300 were present in the ballroom of the Hotel Intercontinental on that Wednesday evening. The format of the evening consisted of a panel debate, with former judge of the Supreme Court (Terry Cole) in the chair, 6 panel members (1 contractor, 2 project managers, 1 engineering consultant, 1 architect and 1 lawyer).

As a basis for discussion, twelve questions were asked of the panel. The matters covered such matters as: Do margins reflect risk? Are the "correct" parties accepting the risk? Are the risks identified or quantified to or by the parties accepting the construction risks? The effect of Government involvement in the industry upon margins. The consideration of documentation – does it follow "standards" and reflect the risks? The sharing of errors in the documentation that may have been developed "for a price". The level of responsibility between a designer and the builder, between whom no contract exists. Whether designs should be warranted by the designer? And whether the 180 or so separate bodies in the industry would gain by representation by a single body?

The session included questions from the floor, for about half an hour from recollection. The opening address and close of the panel session was performed by former judge of the Federal Court and former Royal Commissioner (into the building industry) Gyles. Interestingly, he believed that there was a good case for co-operation by the various sections of the industry, and that the matter needs to be solved from the inside rather than from the outside. There is a need for the delivery chain to receive a good margin because they are producing a good product. He concluded that there is a need to convince the ultimate purchaser that this is worth paying for, and that standards for tendering

and appropriate allocation of risk – and who is bearing these risks (determined before the contract is signed) – should be matters for attention.

Points made on behalf of our Institution were: 1. Owner should be an informed buyer, and be the one who makes the decisions as to acceptance of risk. 2. Survey of PI limit of liability under the PES scheme to be conducted soon – options are to respond or it will die. 3. Use of NPER to demonstrate skill level of the engineer expertise.

The opportunity to air the concerns of the Industry, among representatives across the various elements of the industry, can only help understand the ramifications of such matters as risk acceptance and risk sharing, to the ultimate benefit of all concerned (from designer to contractor to litigator to owner).

Public Relations – Lifting Public Recognition

The Australian Historic Engineering Plaquing Program provides a means of recognition of the contribution of the Engineering Profession to the well-being of the community. The work of the IEAust Heritage Committee therefore is about:

- making people aware of our rich engineering heritage
- making them aware of the contribution of engineers, and
- encouraging the conservation of important engineering works.

The tramway era in Sydney covered the period from 1861 to 1961, during which four types of motive power were used: horse, steam cable and electricity. The electric routes covered a total of 265km from their start in 1899, and with its center in the city, the tramway system covered a vast area of the metropolitan area. Sydney was among the first cities in the world to embrace and utilise that new technology and in many areas, Sydney practices were the world-best practice of the time. For example, the tramway workshop in Randwick was a world leader in the introduction of electric arc welding. You may not be aware – I certainly wasn't – that the PowerHouse Museum is the original electric tramways powerhouse.

The value of the Tramway system to the functioning of the City of Sydney – and perhaps, to much of its colour and life – can be judged from its patronage. The Commissioner reported in 1900 that over 25 million people had been carried in the first year of operation of the first electric tramway, from Circular Quay to Pyrmont, at one penny per section. In 1944-45, Sydney had a population of 1.3 million – and NSW tramways patronage was 405 million passengers. Today, well almost today.....in 1997/98 – 55 years later, Sydney's population was 3.9 million and City Rail and the State Transit Authority (Sydney Buses) attracted 450 million passengers, only 11% greater. This, also, demonstrates the amazing capacity of that earlier system.

In its entirety, the Tramway system represented the integration of electrical, mechanical and civil engineering. This was a major factor in the decision by the Sydney Chapter of the Heritage Committee to nominate the museum for this plaque. The Sydney Tramway Museum is today's embodiment of the tramway system, and holds within it a storehouse of marvelous engineering and social history.

A plaquing ceremony was held at Sydney Tramway Museum, Sutherland on 20 March. This was the 63rd Historic Engineering Marker installed in Australia. The event was well managed with representatives from Federal and State Governments (Danna Vale, Ian McManus, Barry Collier), Local Councils (George Hurley, representing Sutherland Shire, and former City of Sydney Lord Mayor Doug Sutherland), former Transport Minister Brian Langton, and representatives of local historical society together with IEAust & IPENZ Heritage Committees.

The 64th Historic Engineering Marker was unveiled at Wollongong Harbour on 28 April and the 19th National Engineering Landmark at Broken Hill Mine on 21 April.

Regional Consultative Committee

On 6 April, a RCC meeting was held at National Office, in conjunction with the Council and Congress meetings. This was a meeting of Division Presidents and Executive Directors with Deputy NP Peter Greenwood. The Chief Executive and Deputy Chief Executive were in attendance. Disappointingly, NP Cole did not attend.

Points discussed included: status of publicity campaign from SA Division, which outlined the status of the campaign preparation and that SA claim the campaign is taking up considerably more time than anticipated and that SA will be developing proforma for other divisions to use in subsequent campaigns. NVP Greenwood advised that the RCC was the overview committee of the campaign and is to advise Council as to the benefit or otherwise of the campaign. There appears to be a difficulty in developing monitoring means, which were to be established in the w/e 13 April. There was some discussion as to how the RCC saw its role to report to Council – should be a direct reporting role to the National President.

A draft paper by Deputy Chief Executive Bill Crews in regard to the benefits or otherwise of IEAust owning property was discussed. It would appear that this is a direct result of the presentation to Council by Sydney Division when Council was in Sydney (15 Feb 2001). Responses to this paper were requested.

The situation of the IEAust web-site was discussed, particularly in regard to the recent changes which exclude units and large web-page users (eg Heritage), and in the context of the recent decisions to remove pages from the web-site without consultation. An outcome of this discussion was reinforcement of the value for Sydney Division to establish a stand-alone web-page as a means of providing an appropriate service to our Division.

Totally Wild

Queensland Division has negotiated with the popular children's TV program *Totally Wild* on the Ten Network to include stories on Australian engineering. *Totally Wild* is a semi-documentary style programme which presents children with a thorough yet simplistic coverage of a topic. It does not trivialise the subject matter and, when the topic is complex or difficult, the best explanation is worked out with the engineer or communicator.

Totally Wild is apparently not only the leading children's program in the 7-13 age group each afternoon on Australian television, but also is shown to Europe, Asia and South America on Discovery Channel. If you know of projects that could be featured on *Totally Wild*, please get in contact with your Division Office. Have such a project join those that are already "in the can".

Better Engineering Creates Better Communities

Andrew Leventhal

WOLLONGONG SNIPPETS

Double award winner

Thanh Vinh Nguyen, was recently presented with two IEAust Awards. The Electrical Engineering graduate was given the IEAust Electrical College Award at University of Wollongong for the best academic performance in the subjects comprising the final year of his full-time course. Allan Sangster, Chair of the Sydney Division Electrical Branch presented the certificate and monetary prize.

Thanh was also presented with the IEAust Illawarra/Sutherland Regional Group Award for Academic Excellence over and above all final year (2000) Bachelor of Engineering students. This award was presented by Andrew Spence, Chair of the Illawarra/Sutherland Regional Group.



Andrew Spence (centre) and Allan Sangster (right) chat with Prof Chris Cook, HOS, Uni of Wollongong, at the recent Fac of Informatics Awards Evening.

Bacon, eggs & ethics for breakfast

Dr Simon Longstaff, Executive Director of the St James Ethics Centre was the guest speaker at the Illawarra/Sutherland Regional Group's annual Breakfast Meeting last month. Obviously a seasoned speaker with a very thorough knowledge of his topic, Dr Longstaff gave a bright and breezy presentation on various ethical dilemmas and offered possible solutions.

The St James Ethics Centre itself was established just over ten years ago to provide a forum for the provision of business and professional ethics. The objective being to foster ethical development in individuals and organisations, giving each the freedom to integrate ethics in their decision making.



Dr Simon Longstaff during his presentation at the ISRG Breakfast Meeting last month.

Judith Gordon
Illawarra/Sutherland Regional Office

PLAQUING CEREMONY



The plaque

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1893 C Class tram ready for the ceremony.

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In response, State Member for Heathcote, Ian McManus MP, observed that every time he visited the Sydney Tramway Museum he was impressed with the progress being made in extending this wonderful facility. He noted that the museum was opened in 1950 by Deputy Premier Pat Hills MP and from small beginnings has grown to become the largest in the southern hemisphere an extraordinary achievement for an entirely voluntary organisation operating as a non-profit co-operative society. The NSW Government had been a significant contributor to the ongoing development of the heritage transport complex. Past grants have been instrumental in helping the museum to construct its Restoration Building and the erection of the third major building on the north west corner of this site. The safety of the museum's valuable and unique collection has been further safeguarded by the fire sprinkler system which has also been assisted



The plaque unveiled and the official party.

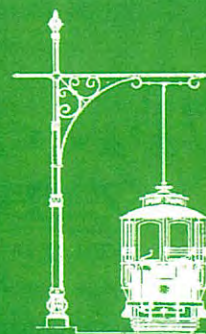
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Overall a most successful day for the museum and special thanks to all those who assisted in the smooth functioning of this important event.

TROLLEY WIRE



No.285

MAY 2001

\$8.25*

Print Post Approved PP245358/00021



THE TRAMS THAT NEVER CAME



The plaque has been unveiled. Left to right are Councillor George Hurley, Museum Director and MC Greg Sutherland, Federal Member for Hughes Danna Vale, Institution of Engineers Australia Chairman Andrew Leventhal, State Member for Heathcote Ian McManus, State Member for Miranda Barry Collier, and Museum Chairman and Financial Director Howard Clark.

Frank McQuade

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After conducting tests, checkrails are to be fitted to the north-west, south-west and south-east curves. Quotes are being obtained from various suppliers.

We recently underwent a routine inspection from officers of the Public Transport Safety Directorate, which we passed. Further work has gone into the development and refinement of our management system and accompanying documentation. This includes the completion of the Signalling System Operation Manual.

<http://www.railpage.org.au/tram/loftus>

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Other Work

John Withers has designed and constructed a telephone actuated substation shutdown unit. The unit functions when a specific number is dialled from any phone connected to the Museum's PABX phone exchange, and drops out both the Carbn and mainline circuit breakers. This feature makes it easy to disconnect supply in an emergency by using the trackside phones.

LOFTUS

South Pacific Electric Railway Co-op Society
PO Box 103, Sutherland, NSW 2232

From Greg Sutherland, Col Gilbertson and Frank McQuade

Institution of Engineers Plaquing Ceremony

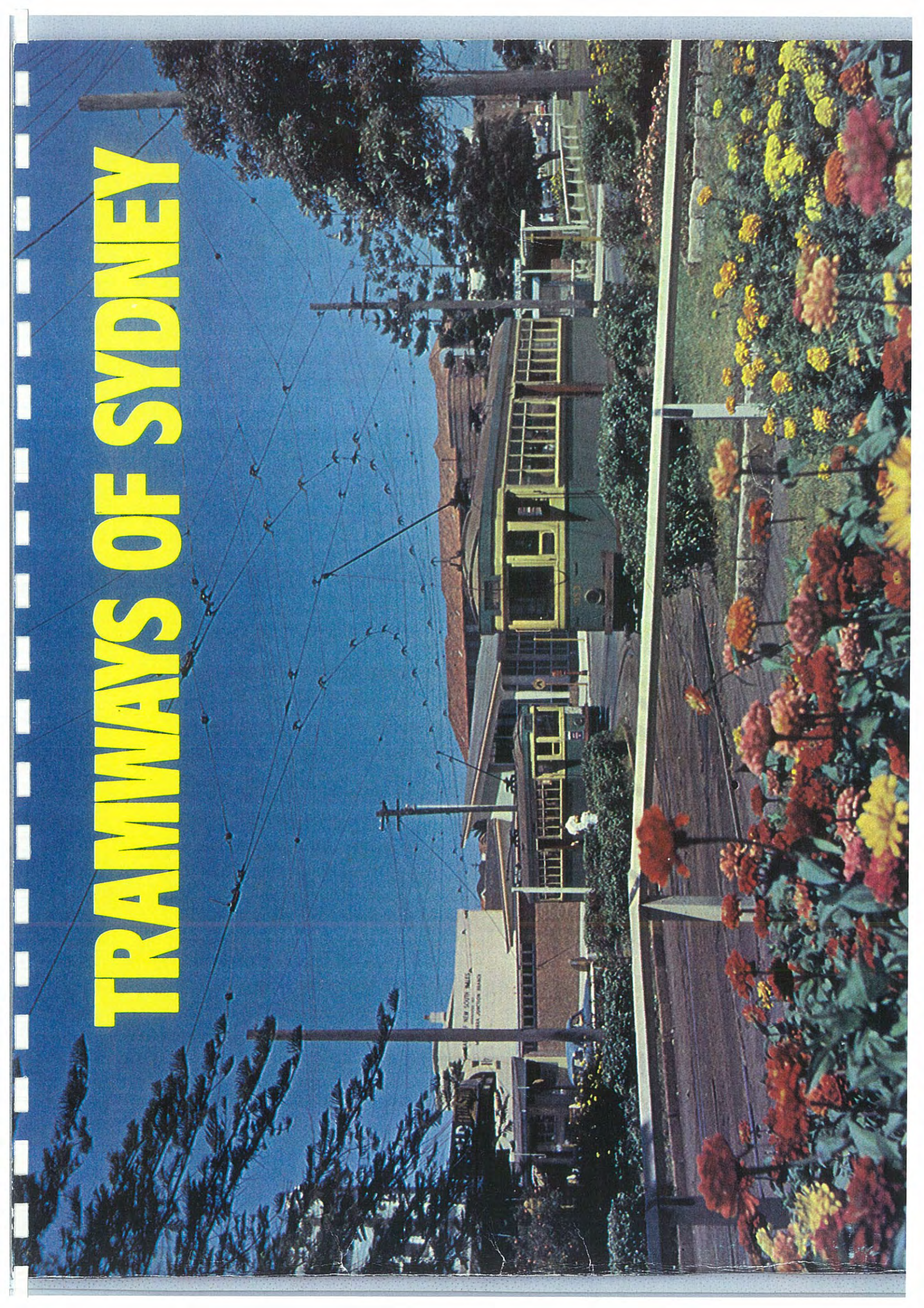
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TRAMWAYS OF SYDNEY



NEW SOUTH WALES GOVERNMENT TRAMWAYS SYDNEY • CITY & SUBURBAN STEAM & ELECTRIC LINES AT MAXIMUM EXTENT OCTOBER - DECEMBER 1922



ELECTRIC LINES

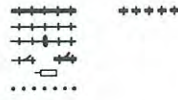
DOUBLE TRACK
 SINGLE TRACK
 DOUBLE TRACK DEAD-END TERMINUS OR
 CROSSING LOOP ON SINGLE TRACK LINE
 SIDING
 DEPOT

DECEMBER 1922 CLOSED OR RELOCATED PRIOR TO 1922 OPENED AFTER 1922



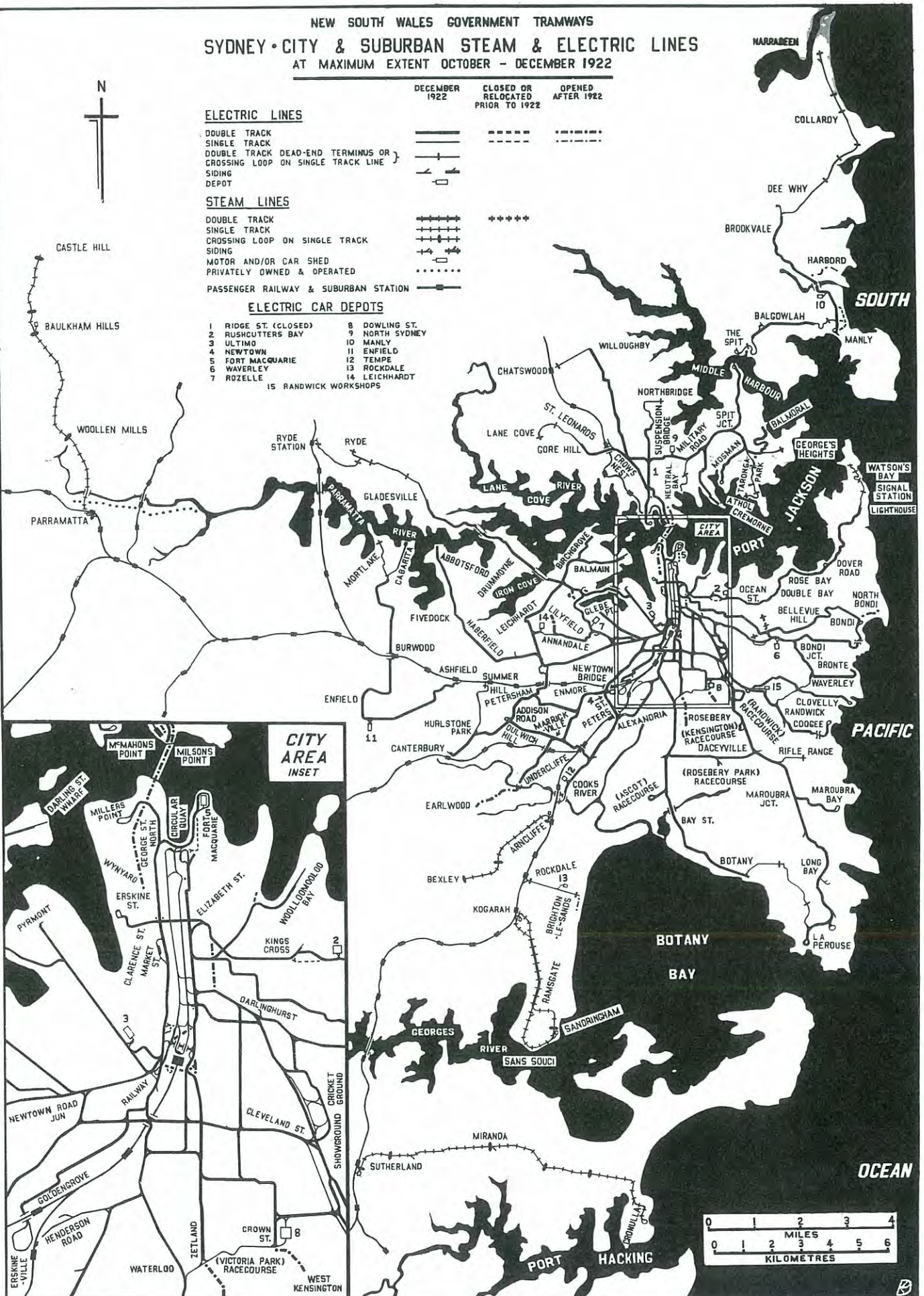
STEAM LINES

DOUBLE TRACK
 SINGLE TRACK
 CROSSING LOOP ON SINGLE TRACK
 SIDING
 MOTOR AND/OR CAR SHED
 PRIVATELY OWNED & OPERATED
 PASSENGER RAILWAY & SUBURBAN STATION

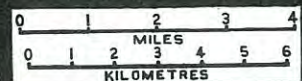
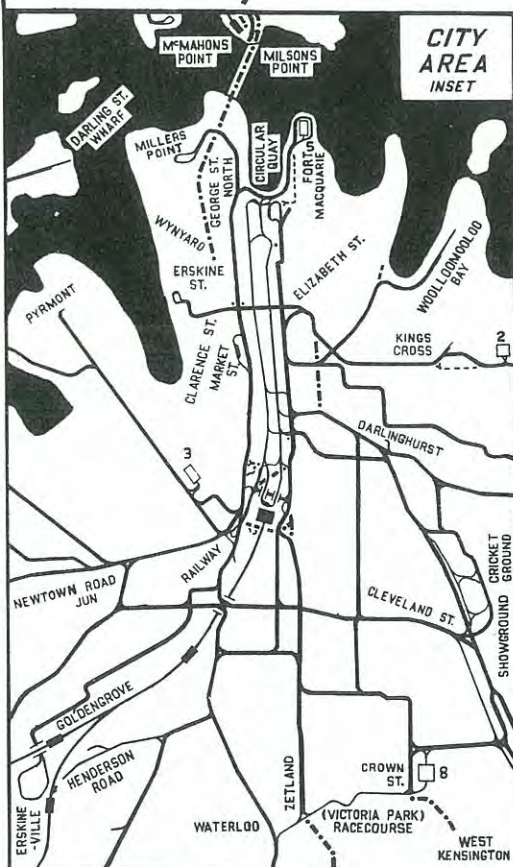


ELECTRIC CAR DEPOTS

- | | |
|-----------------------|----------------|
| 1 RIDGE ST. (CLOSED) | 8 DOWLING ST. |
| 2 RUSHCUTTERS BAY | 9 NORTH SYDNEY |
| 3 ULTIMO | 10 MANLY |
| 4 NEWTOWN | 11 ENFIELD |
| 5 FORT MACQUARIE | 12 TEMPE |
| 6 WAVERLEY | 13 ROCKDALE |
| 7 ROZELLE | 14 LEICHHARDT |
| 15 RANDWICK WORKSHOPS | |



CITY AREA INSET

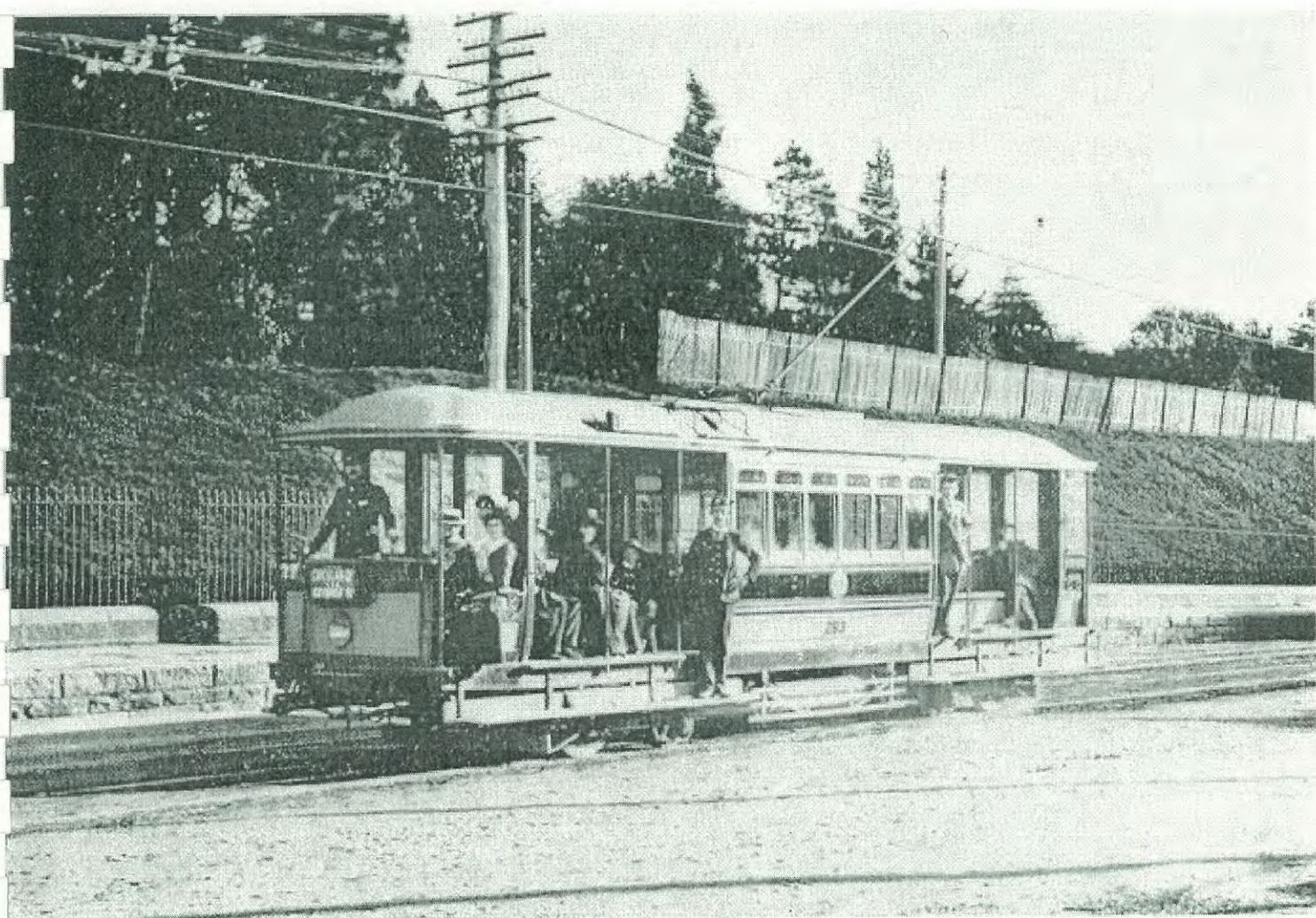






"Ts" 666 and 657 in original condition operating on the former cable tramway tracks at Queen's Square, Sydney, 1905

Photo. N.S.W. Govt. Printer



F car No. 283 in Parramatta Road outside the University.

Photo, A. E. Breyley, courtesy NSWG